9.0 Work Planning Processes

This RFSOG is intended to provide guidance for all activities that may be performed at the Site. The LMS Work Planning process, discussed in Section 9.1, applies to all activities at Rocky Flats; however, it is applied using a graded approach based on the nature of the activity. The work planning process is described in the following sections, followed by discussions of some of the more unusual types of nonroutine activities that may be necessary at the Site in order to ensure protectiveness of the remedy and continued compliance with the requirements of RFLMA. Due to the unforeseen nature of nonroutine activities, this section is not intended to provide complete, detailed, prescriptive requirements for any given situation, but rather some general requirements that must be met, and general topics that must be considered, in order to proceed.

9.1 LMS Work Planning Process

The LMS Work Planning process is described in Program Manager Directive PM-08-02, which will be incorporated into the appropriate LMS procedure manuals. **All activities** are subject to this process on a graded approach. This section provides some Site-specific guidance on implementation of this directive. A copy of the directive is provided on the RF-share drive for reference until it is incorporated into the LMS manuals. Hereinafter, this process is referred to as the LMS Work Planning Process (WPP).

ALL field activities and all nonroutine office activities MUST be listed on the Rocky Flats Plan of the Week (POW) to be authorized. During the POW meeting, activities may be discussed and additional planning or H&S evaluation/refresher may be initiated prior to the performance of the activity. If an activity that is not on the POW is scheduled after the POW is complete, the LMS Site manager or designee must approve adding the activity to the POW before the activity is performed.

A POW meeting is held each week to authorize the activities for the week. Plan of the Day (POD) or daily tailgate meetings are required for many projects as defined in the LMS WPP.

9.2 Rocky Flats Work Planning Process

9.2.1 Routine Activities

Activities are considered routine if they are performed frequently and in general these types of activities are covered by an LMS or Rocky Flats procedure. As part of the WPP and approval of the POW for the activity, procedures and other work control documents may need to be prepared for the activity. JSAs for routine activities should be reviewed and revised, if necessary, at least every 6 months or if the procedure for the activity changes. Routine activities require the same planning steps as nonroutine activities; however, these planning steps are not required each time the routine activity is performed. Instead, the planning steps, as described in the LMS WPP and supplemented by requirements in this section, should be performed once a year for simple activities that occur frequently, and every 6 months for more complex activities or those that occur infrequently.

9.2.2 Nonroutine Activities

This section is not intended to be all-inclusive; any construction project or major maintenance project is considered a nonroutine field activity, even though they may be considered routine from the perspective of maintaining the remedy and managing the Site. (For example, replacing treatment media in a groundwater treatment system is considered a routine maintenance activity from the perspective of system operation and remedy maintenance, but is considered a nonroutine field activity from the perspective of the work planning process.) However, many small projects are also considered nonroutine activities. All nonroutine activities will require detailed evaluation by qualified individuals in accordance with processes outlined in this section. Specific qualifications for the personnel performing the evaluation will depend on the nature of the activities to be performed. The evaluation will consider the nature of the condition to be addressed or corrected, possible methods of achieving the appropriate endstate, potential hazards involved (chemical, radiological, environmental, biological, and so forth—those that would apply if the activity was performed anywhere, as well as any Site-specific hazards that may apply), and how to control those hazards. An appropriate path forward will be developed with input from LMS and DOE-LM personnel; in addition, consultation with and input from CDPHE and/or EPA in accordance with RFLMA may be necessary.

Nonroutine activities must be evaluated during the early planning stages to ensure that all required evaluations, notifications, permits, and safety requirements are incorporated into procurement documents and project procedures. Figure 9–1 presents a general work process flowchart as guidance; however, not all projects will follow the process exactly as charted. Individuals performing the evaluation should be aware that some projects may require additional steps not included on the provided checklists or flowcharts.

Two checklists are used for evaluating nonroutine projects or for the periodic evaluation of routine activities. The first checklist, LMS 1005e, Project/Activity Evaluation, is required by the WPP and must be completed with all required signatures before the project or activity is implemented. Form LMS 1005e includes a wide variety of environmental and safety topics that must be considered. However, it does not include some Site-specific topics. In addition, it does not document the completion of evaluations, notifications, and other requirements; it merely indicates that a topic must be considered.

A second checklist, *LMS Project/Activity Evaluation—Rocky Flats Site Supplement* (Appendix H), includes Rocky Flats-specific topics that must be considered when planning an activity. This checklist provides a mechanism for determining additional requirements for notifications, approvals, evaluation, or other planning. As each item is completed, the responsible individual initials and dates the form. When all items are complete, the LMS Site manager reviews the two forms, plus any additional documentation required to fully understand the project and the planning completed to support that project. The LMS Site manager then signs the Site-specific form, indicating that the project or activity can be added to the POW for final approval to implement. Projects or activities are not approved for implementation unless listed on the appropriate approved POW.

Completed checklists will be maintained in the project file.

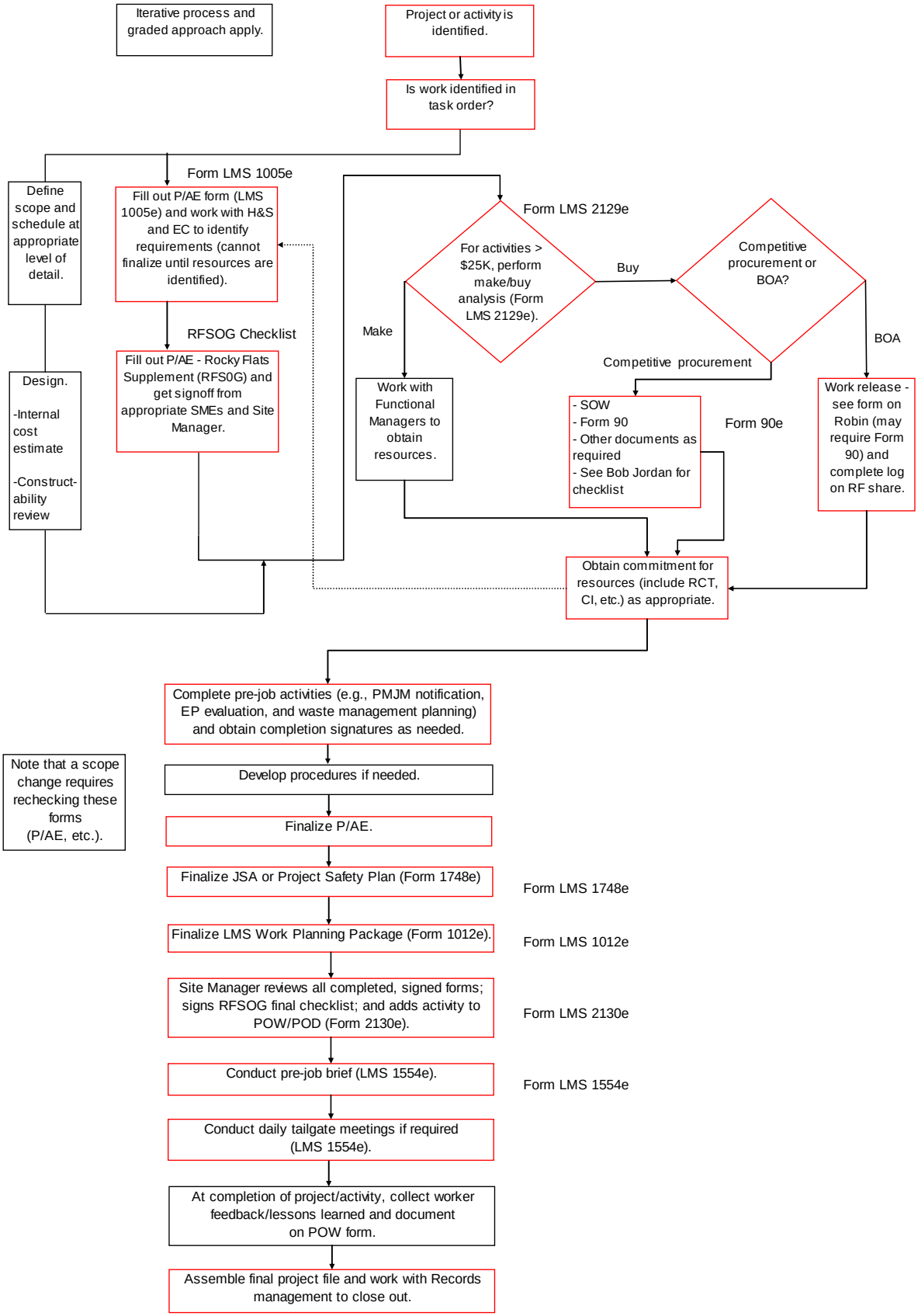

Figure 9–1. Work Flow Process Flowchart

9.2.3 Emergency Response

Emergency response for some activities, such as a dam emergency, has been worked out in advance (Attachment B2). General responses are provided in the *Comprehensive Emergency Management System* (LMS/POL/S04326). (Note that the most current version of the LMS manuals will be used.) Planning documents and JSAs can be developed in advance for these emergency response activities that may be reasonably anticipated. However, other emergencies cannot be anticipated. For emergencies such as tornadoes or fires, it is not reasonable or possible to stop and plan the immediate response. Personnel must take action as necessary to protect the H&S of themselves and those around them. However, when the immediate emergency has been resolved sufficiently that there is time to step back, pause, and evaluate the next steps, personnel involved in the emergency response should begin to implement, on a graded approach with assistance from H&S and Site/LMS management, those activity planning steps that are useful in safely resolving the emergency situation. Incident reporting/notification should be performed as soon as it is safe to do so.

Urgent activities that are not true emergencies involving danger to personnel should, at a minimum, be discussed with H&S and the LMS Site manager prior to implementation. The H&S representative and the LMS Site manager will determine the level of pre-planning required for the activity. An evaluation and verbal briefing by H&S will be required for even very urgent activities unless taking time for this step could result in injury to personnel or bystanders or to the environment.

9.3 Intrusive Work and Soil Disturbance Evaluation

One of the institutional controls in effect at the Site is the prohibition of intrusive activities that are not related to the remedy. In addition, the existing buried gas pipelines, residual contamination, remaining subsurface infrastructure, and electrical lines may present hazards when intrusive work is performed. Soil disturbance in some areas may also require evaluation and notification because of wetlands or endangered species habitat designations. A Soil Disturbance Evaluation, in accordance with the *Rocky Flats Site Soil Disturbance Evaluation Procedure* as provided in Appendix F, will be performed before intrusive work is conducted, unless specifically exempted by the procedure. An example of a completed Evaluation is included in Appendix F. The Soil Disturbance Evaluation for each project or activity will be documented and approved by the appropriate SMEs and LMS Site manager in accordance with the procedure. The evaluation will be maintained in the project file.

Due to the institutional control prohibiting soil disturbances to depths of 3 feet or more below ground surface, excavations that will extend to this depth require advance notice and consultation with CDPHE.

9.4 Nonroutine Sampling/Characterization

In many cases, one of the first responses to off-normal contaminant concentrations at high-priority sampling locations (such as POCs) will be to design and implement nonroutine sampling to evaluate the potential causes of the observed conditions. This nonroutine sampling may be

limited to collecting grab samples, or it may involve more detailed characterization (e.g., soil sampling or installation of new monitoring wells or surface water stations).

Nonroutine sampling and characterization activities must be evaluated carefully prior to commencement in accordance with the LMS and Site work planning processes. Historical data from the immediate vicinity of any locations being considered for sampling or other characterization work will be reviewed, as will their proximity to features shown on Figure 1–3, Figure 1–4, Figure 1–5, and Figure 6–1. These figures display subsurface features and contamination still present at the Site; note that they are not intended to show all remaining contamination.

Nonroutine samples will also be evaluated for any special handling or shipping requirements that may apply. This evaluation must include input from staff with detailed knowledge of these requirements. In addition, the laboratory where these samples are shipped must be able to perform the necessary analyses, which may be a concern if the concentrations or radiological activities exceed a certain threshold. If necessary, a qualified radiological engineer will be involved in the project to ensure radiological requirements are met.

9.5 Wildfires and Controlled Burns

In order to maintain healthy, robust communities of native vegetation at the Site, it may be desirable to conduct controlled burns. Despite its obvious and well-documented success, use of this once-natural process has been very controversial at the Site due to stakeholder and community concerns about mobilization of contamination via the resulting smoke and ash from the fire, and the potential for increased soil erosion due to the absence of vegetation.

Studies performed in the 1990s and early 2000s, including data collection from actual controlled burns, wild fires, and modeling, have shown that there is no significant increase in radiological risk to downwind residents associated with smoke from these fires. As a worst-case scenario, one modeling effort considered the hypothetical effects on a firefighter with no respiratory protection who is standing directly in the smoke plume immediately downwind of the former 903 Pad (K-H 2000b). Unless activities in the soil are significantly greater than 100 picocuries per gram (pCi/g) of plutonium, americium, or uranium,[33] this firefighter would receive a dose of less than 1 millirem (mrem) from the fire. (The average annual dose across the United States is 360 mrem.) Therefore, due to dispersion of the smoke plume, the dose to downwind residents from the smoke would be many orders of magnitude lower.

Increased erosion from a burned area may be a concern if not properly addressed. Erosion may be minimized via application of an appropriate control, such as erosion mats or sprayed FlexTerra. Application of wattles, straw bales, silt fences, and so forth may also be effective. The specific control will be selected based on the topography and ease of application, season, and other factors, and will be maintained until vegetation has been reestablished. Refer to Section 4.4 for a discussion of erosion control and revegetation.

Evaluation of the proposed burn must be evaluated in accordance with Section 9.2.2. In addition, DOE Order 450.1, *Environmental Protection Program*, requires all DOE elements to incorporate

[33] The activity varies by isotope, ranging from 102 pCi/g for depleted uranium to 188 pCi/g for enriched uranium, with plutonium and americium within this range.

an Environmental Management Systems (EMS) approach into their Integrated Safety Management Systems (DOE Policy 450.4). DOE Order 450.1 defines an EMS as a continuing cycle of planning, implementing, evaluating, and improving processes and actions undertaken to achieve environmental goals. The Order also mandates the inclusion of policies, procedures, and training to identify activities with significant environmental impacts in the EMS, as well as methods for managing, controlling, and mitigating the impacts of these activities. The Order specifically states that the protection of resources from wildland and operational fires should be considered (DOE Order 450.1 § b[1][e]). In addition, a February 24, 2003, memorandum, "Department of Energy (DOE) Wildfire Management Policy," from the Secretary of Energy to the Under Secretary for Energy, Science and Environment and the Administrator of the National Nuclear Security Administration directed each Program Secretarial Officer to ensure that sites have wildland fire management plans in place that are consistent with 2001 Federal Wildland Fire Management Policy and Implementing Actions. The *Rocky Flats Site Wildland Fire Management Plan* (Attachment E10) meets this requirement.

Discussions related to conducting controlled burns will be held with the appropriate external parties, which include the RFLMA parties and USFWS. The Fire Chief at the Rocky Mountain Fire District will also be informed and consulted prior to any controlled burn at the Site. The burn must be conducted by an appropriately certified, professional wildland fire contractor, according to a burn plan prepared by the contractor. Site personnel will ensure the contractor has access to any historical data needed, and will provide copies of Figure 1–3, Figure 1–4, Figure 1–5, and Figure 6–1 in case these features affect burn activities or preparations. The Rocky Flats Stewardship Council will be informed of the burn during the planning phase. Although the Stewardship Council does not have approval authority, DOE-LM may choose to accept comments and modify plans accordingly.

9.6 Source Evaluations

Routine water monitoring is defined and discussed elsewhere in this document (Section 6.1) and in RFLMA. Additional monitoring that may be deemed necessary due to recognition of potential impacts to surface water and exceedances of surface water standards would be performed as a source evaluation. Designing and implementing a source evaluation in response to a RFLMA reportable condition (Section 15.1) requires that the regulatory agencies be consulted.

The primary purpose of monitoring groundwater at the Site is to protect surface water quality. The Site's hydrologic setting, particularly its low groundwater flow rates and the physical separation of shallow, Site-impacted groundwater from deeper groundwater resources, leads to relatively well-contained groundwater contamination. However, because Site-impacted groundwater discharges to surface water before leaving the Site, monitoring groundwater in the vicinity of downgradient contaminant plume edges and along pathways to surface water is particularly important.

Special groundwater investigations may be required in response to indications of increased contaminant concentrations that may have the potential to impact surface water. These projects are referred to as "groundwater source evaluations," and are typically of limited duration and focused scope. Their primary purpose is to investigate observed conditions, identify possible causes, and estimate the potential impact on surface water. In areas where an impact to surface water has been previously recognized and evaluated, a significant increasing trend adjacent to

surface water may require the performance of another evaluation. Numerous groundwater evaluations are described in the pre-closure RFCA Annual Groundwater Monitoring Reports.

When reportable water quality measurements are detected by surface water monitoring at POEs or POCs, additional monitoring may be required to identify[34] the source and evaluate for mitigating action. Analyte suites for source evaluation are determined based on the contaminant of current concern that has initiated the source evaluation activities, or related indicators. The information types are entirely dependent on the results of other monitoring objectives under which the source was detected. The analyte suites are limited to parameters that will aid in the identification and evaluation of a contaminant source. Source evaluation activities may be implemented anywhere within the Site surface water drainage area where a previously unidentified contaminant source is suggested. The distribution of monitoring points is determined by the details of the specific source evaluation to determine source location and efficiently use resources. For example, if POE monitoring suggests a previously unidentified source within the COU, then monitoring may be implemented within the COU to locate the source. Source evaluation monitoring should begin as soon as practical after source detection and continue until the source is identified and evaluated or is no longer detected. The source evaluation scope will be based on the status of the source evaluation, taking into account, but not limited to, weather conditions, water availability, and process knowledge. CDPHE may make requests that affect the monitoring that is performed, or its duration.

In general, a source evaluation will begin by generating focused objectives through the RFLMA consultative process that apply to the concern being investigated. These objectives are qualitative and quantitative statements that specify the type, quality, and quantity of the data required to support the decision-making process. Objectives are established to ensure a source evaluation has been logically defined and planned, and that the scope and data collection will support the eventual decisions required. QC objectives are established to ensure data generated by a source evaluation will be gathered or developed using procedures appropriate for the intended use of the data. The objective development process is generally derived from EPA guidance documents (e.g., EPA 1994), but has been used primarily as a decision support tool as opposed to a sample optimization tool.

Objectives developed for a given source evaluation will consider such factors as relative impact, priority, and risk to the public. This approach will identify areas with the highest potential for surface water contamination. Each source evaluation will be implemented under a project-specific SAP, work plan, or other work control document, which will identify the specific investigation objectives, data collection methods and locations, and follow-up actions that apply to the existing circumstances. If a significant impact to surface water is identified, the findings will be provided to CDPHE and further action will be discussed. Where modeling results form part of the basis of decisions, these predictive components of the evaluation will be weighed against actual field data in setting the priority for action. Monitoring to be performed following the selected action will also be determined in consultation with CDPHE.

In most if not all cases, a preliminary data review will be performed immediately upon recognition of a potential concern. Sources of data and other information may include the analytical database (SEEPro, which contains data from the historic Rocky Flats Soil and Water Database), recent quarterly and annual reports, the HRR (DOE 1992 and annual updates

[34] Note that the term “identify” is used here to mean “locate.” Characterization is also implied.

concluding with DOE 2006d), the Groundwater IM/IRA, the RI/FS, individual Closeout Reports for buildings or IHSSs of interest, and any other source of information that may be applicable. The results of this review may be sufficiently clear to indicate a cause of the given concern without the need for additional sampling and analysis. In such cases, CDPHE will be notified and discussions will be held on the conclusions reached through the reviews.

In other cases, more intrusive activities may be required, such as well installations, excavation, and so forth. These intrusive activities must be evaluated in accordance with Section 9.3 before implementation. In cases where surface water quality is threatened, these activities will be selected and discussed in coordination with CDPHE.

An evaluation of surface water impact may include, but not be limited to, any or all of the following possible components:

- Review of historical data from the well(s) indicating a potential surface water impact and other wells nearby (including abandoned wells if appropriate);
- Review of historical data from the surface water location indicating a surface water impact and other locations nearby (including discontinued locations if appropriate);
- Review of the HRR (DOE 1992, with annual updates through DOE 2006d) to identify possible sources of the contamination observed;
- Inspection of the area surrounding and upgradient of the well or surface water location to investigate any physical changes that could be factors in the reported data;
- Contaminant fate and transport modeling;
- Definition of extent of contaminants and/or the contaminant pathway through additional sampling of soil, groundwater, surface water, and/or seeps, and through additional well, borehole, or surface water monitoring station installations;
- Measurement or estimation of contaminated groundwater flow velocity, flow direction, and discharge to surface water;
- Measurement of surface water flow rate in the area of the impact;
- Measurement of the area of surface water directly impacted by the contaminated groundwater;
- Determination of nature and extent of ecological impact from contaminated groundwater discharging to a surface water receptor;
- Determination of concentration loadings and mass flux of contaminants to the surface water receptor; and
- Estimation of impacts due to seasonal variations, discharges, or removal of groundwater collection systems.